

Clinical Practice Guideline for the Management of Open Fractures

(Excludes open facial fractures)

Management includes timely administration of antibiotics, surgical debridement with removal of necrotic tissue and contamination, and skeletal stabilization.

1. Administer IV antibiotic within 1 hour (see chart)
2. Immediately contact orthopedic resident on call
3. Place moist sterile gauze over the wound and cover with a sterile dressing until orthopedic evaluation, minimize wound exposure
4. Debridement of gross contaminants will be performed by the orthopedic resident on call
5. Apply direct pressure to control active bleeding, avoid tourniquets unless bleeding is not controlled with direct pressure
6. Obtain scout film of the open fracture extremity in the trauma bay if clinical condition allows
7. Administer tetanus prophylaxis in the trauma bay

Gustilo Type Open Fracture	Mechanism	Contamination	Antibiotic
Type I or II (wound <10 cm & w/o extensive bone loss, soft tissue/periosteal damage, or contamination)	Low energy with minimal soft tissue trauma	Minimal	Cefazolin 2g IV q8h*
Type III (wound >10 cm & w/ extensive bone loss, soft tissue/periosteal damage, or contamination)	High energy with severe soft tissue trauma or comminution	Gross contamination	Ceftriaxone 2g IV q24h*
Salt/brackish water contamination of type I, II, or III			Add doxycycline 100 mg po/IV q12h to above regimen*
Fresh water contamination of type I, II, or III			Piperacillin/tazobactam 4.5g IV q6h AND doxycycline 100 mg po/IV daily * (May use cefepime 2g IV q8h instead of piperacillin/tazobactam if desired)
Soil or fecal contamination of type I, II, or III			Add metronidazole 500 mg po/IV q8h to above regimen
Type I or II w/allergy to cephalosporins or anaphylactic reaction to PCN	Low energy with minimal soft tissue trauma	Minimal	Clindamycin 600 mg IV q8h*
Type III w/allergy to cephalosporins or anaphylactic reaction to PCN	High energy with severe soft tissue trauma or comminution	Gross contamination	Clindamycin 600 mg IV q8h AND Aztreonam 2g IV q8h*
GSW w/o severe soft tissue injury			Cefazolin 2g IV q8h*
GSW w/severe soft tissue injury			Ceftriaxone 2g IV q24h*
*Antibiotics are continued until 24 hours post-wound closure up to a max of seven total days. Placement of a wound vac is closure of the wound. The orthopedic attending and trauma attending will discuss the use of prophylactic antibiotics for any duration longer than defined in this guideline.			
*Cefazolin, aztreonam, cefepime, and piperacillin/tazobactam require renal dose adjustments			